

REMARKS

The Office Action mailed September 10, 2010 has been reviewed and carefully considered. No new matter has been added.

Claims 1-22 are pending.

For purposes of coordination of examination, Applicants wish to remind the Examiner that applications are currently undergoing examination that have related disclosed subject matter. One application is U.S. Application No. 10/569,319 entitled "METHOD AND APPARATUS FOR DECODING HYBRID INTRA-INTER CODED BLOCKS", which has claims generally directed to the decoding method and apparatus. Another application is U.S. Application No. 10/569,236 entitled "METHOD AND APPARATUS FOR ENCODING HYBRID INTRA-INTER CODED BLOCKS", which has claims generally directed to the encoding method and apparatus. Both are assigned to Examiner Emmanuel Bayard in Art Unit 2611.

In the Office Action, Claims 1-8, 14, and 19-22 stand rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Regarding the same, a telephone conference between the Applicants' representative, namely Mr. Gaspare J. Randazzo, Reg. No. 41,528, and the Examiner, namely Mr. Emmanuel Bayard, conducted on October 20, 2010, resulted in the Examiner kindly agreeing to withdraw the aforementioned 35 U.S.C. 101 rejection. The agreement reached between Mr. Randazzo and Mr. Bayard is memorialized in a telephone Interview Summary dated October 25, 2010, a copy of which is attached hereto as a reminder for the Examiner's convenience. Accordingly, it is believed that no outstanding issues remain regarding 35 U.S.C. 101 and that all pending claims satisfy the same.

Claims 1-22 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,898,243 to Alvarez (hereinafter "Alvarez"). We note that while the heading of the preceding rejection in the pending Office Action only identifies Claims 1-12 and 14-22, Claim 13 is in fact included the rejection's reasoning and application thereafter. The rejection is respectfully traversed.

The independent claims currently pending are Claims 1, 9, 13, 14, 15, and 19.

It is respectfully asserted that Alvarez does not teach or suggest the following limitations recited in Claim 1:

In a video decoder, a method for decoding a hybrid intra-inter encoded block comprising: combining a first prediction of a current block with a second prediction of a current block; wherein the first prediction of the current block is intra prediction and the second prediction of the current block is inter prediction.

Moreover, it is respectfully asserted that Alvarez does not teach or suggest the following limitations recited in Claim 9:

A video decoder adapted to decode a hybrid intra-inter coded block and to provide reconstructed pixel data, the decoder comprising: an intra-frame prediction block being operatively connected to a combining unit and for outputting a first intra prediction of the block; and an inter-frame prediction block being operatively connected to the combining unit and for outputting a first inter prediction of the block.

Also, it is respectfully asserted that Alvarez does not teach or suggest the following limitations recited in Claim 14:

In a video decoder, a method for video decoding a block comprising: combining a first prediction of a current block with a second prediction of a current block; wherein the first prediction of the current block is intra prediction and the second prediction of the current block is inter prediction.

Additionally, it is respectfully asserted that Alvarez does not teach or suggest the following limitations recited in Claim 15:

A video decoder for decoding blocks within frames of a sequence of two dimensional images, the decoder comprising: an intra-frame prediction block being operatively connected to a combining unit and for outputting a first intra prediction of a block; and an inter-frame prediction block being operatively connected to the

combining unit and for outputting a first inter prediction of the block; wherein the combining unit is adapted to combine the first intra prediction and the first inter prediction and to output a hybrid intra-inter coded block.

Moreover, it is respectfully asserted that Alvarez does not teach or suggest the following limitations recited in Claim 19: "In a video decoder, a method for video decoding a block comprising: combining a first prediction type for a current block with a second prediction type for a current block; wherein the combination of the first prediction type and the second prediction type forms a hybrid prediction type."

Against the aforementioned limitations of Claims 1, 9, 14, 15, and 19, the Examiner cited Alavarez, reasoning as follows:

As per claims 1, 9, 14-15, 19 Alvarez teaches in a video decoder, a method, for decoding a hybrid intra-inter encoded block comprising: combining (see figs.3a , 3c element 303 and fig. 4, 8b element 403 and col.6, lines 39-40 and col.7, lines 28-30 and col.9, lines 17-25) a first intra frames unit with a second inter frames unit is the same as the claimed a first prediction of a current block with a second prediction of a current block and wherein the first prediction of the current block is intra prediction and the second prediction of the current block is inter prediction (see fig.4 element 401 and 402 and col.7, lines 23-26).

Regarding combiner 303 in FIGs. 3A and 3C of Alavarez, Alvarez discloses the following regarding the same: "[c]ombiner 303 merges data that preferable includes current-field data (from the interlaced source) and current-frame data (from motion-processor 302) in accordance with the motion indicator to produce de-interlaced output" (Alvarez, col. 5, lines 40-44). However, as is well-known to those of skill in the art, a picture is a collective term for a field or a frame. Hence, even presuming arguendo that the combiner is combining predictions (which it is not), since the combiner is combining data from the current field and the current frame, where both the current field and the current frame refer to the current (i.e., SAME) picture, then the combiner is not combining

an inter prediction which must, by definition, correspond to a different picture than the current picture.

We further denote the following disclosure in Alvarez: “since converter 300 preferably utilizes only current-frame data and immediately prior-frame data for a current conversion, the two prior-frame fields are labeled respectively as F1 and F2, and the current-frame fields are labeled as F3 and F4” (Alvarez, col. 6, lines 25-29). Mixer 331, the actual combining part in combiner 303, directly receives as inputs F4L1 (which pertains to the CURRENT FRAME) and the output of filter 321. However, the only inputs to filter 321 are also F4L1 as well as F3L1, where both F4L1 and F3L1 pertain to the CURRENT FRAME. Thus, the combiner 30 never combines any data except for data from the same picture and, thus, never receives inter data, let alone an inter prediction as explicitly recited in Claims 1, 9, 14-15, and 19.

Moreover, there is no indication whatsoever in Alvarez that the data that is actually combined by the combiner 303 is, in fact, prediction data or predictions as essentially recited in Claims 1, 9, 14-15, and 19.

Lastly, regarding the convertor 300 within which the combiner 303 is included, we note that the same operates on a pixel-basis (see, e.g., Alvarez, col. 5, lines 55-59, disclosing “[a] pixel of the current field (“current-pixel”) is then utilized as a basis for conversion to produce de-interlaced data...”). In contrast, the predictions recited in Claims 1, 9, 14-15, and 19 are block-based, as they pertain to a current block. Such a difference is not trivial, as would be readily understood by one of ordinary skill in the art.

Regarding motion correlator 403 in FIG. 4 of Alvarez, Alvarez discloses that “[t]he resulting motion determinations produced by intra-frame motion analyzer 401 and inter-frame motion analyzer 402 (MD1 and MD2 respectively) are then preferably resolved by motion correlator 403 to produce a single motion indicator.”

However, a “prediction” is a term of art, as are “intra prediction” and “inter prediction”. As is known, intra prediction involves the partitioning of a current picture (to be encoded or decoded) into a plurality of blocks where a prediction for a block in the picture is obtained by locating a matching (similar) block in that same picture. Inter prediction involves the partitioning of a current picture (to be encoded or decoded) and at least one reference picture into respective pluralities of

blocks where a prediction for a block in the current picture is obtained by locating a matching (similar) block in the reference picture.

Hence, based on the preceding, as is readily evident, a motion determination as disclosed by Alvarez does not correspond to a prediction as known in the art and recited in the pending claims. We additionally note that the approach of Alvarez requires non-conventional elements with respect to a conventional decoder regarding the generation of the motion determinations. Hence, if the motion determinations were in fact predictions, then it is quite clear that Alvarez would be designed the motion determinations as predictions in order to show the ease of implementation and integration with standard video decoders. Hence, the fact that these non-conventional elements are outputting non-conventional outputs designated as such in Alvarez supports the assertion that the motion determinations are clearly not predictions.

Lastly and quite significantly, while each of Claims 1, 9, 14-15, and 19 recite, *inter alia*, a video decoder, Alvarez is directed to apparatus and methods for down-conversion video de-interlacing (Alvarez, Title) for a VIDEO ENCODER. We note that as per MPEP 2111.02(I), “[a]ny terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation”. We note that while FIG. 1 of Alvarez shows a decode subsystem 133, Figure 1 pertains to the prior art. In any event, if FIG. 1 of Alvarez is to be considered then it must be noted that Alvarez is directed to pre-processing (see, e.g., Alvarez, Abstract), where a pre-processor is shown before encode subsystem 113 in FIG. 1 of Alvarez. Nonetheless, Alvarez explicitly discloses when describing his invention that “[t]he present invention relates generally to digital video processing and, more particularly, to digital **video encoding**” (emphasis added). Hence, Alvarez actually explicitly teaches away from the limitations recited in Claims 1, 9, 14-15, and 19. While a teaching away argument is not germane to a rejection under 35 U.S.C. 102, it nonetheless shows that Alvarez actually does not at all anticipate the subject matters of Claims 1, 9, 14-15, and 19, as every limitation must be shown in a prior art reference in a rejection under 35 U.S.C. 102.

Thus, Alvarez does not teach or suggest all of the above reproduced limitations of Claims 1, 9, 14, 15, and 19. Accordingly, Claims 1, 9, 14, 15, and 19 are patentably distinct and non-obvious over Alvarez for at least the preceding reasons.

We will now address independent Claim 13. At the onset, we note that independent Claim 13 is similar to previously argued independent Claims 1, 9, 14, 15, and 19 in that all such claims

involve encoding by combining an intra prediction and an inter prediction. Accordingly, given that the same reference was cited against all of these claims, we respectfully argue that Claim 13 is patentably distinct and non-obvious over the cited references for at least the same reasons as set forth above regarding Claims 1, 9, 14, 15, and 19. Nonetheless, we will specifically address Claim 13 as follows.

It is respectfully asserted that Alvarez does not teach or suggest the following limitations recited in Claim 13: "A video decoder adapted to decode a bitstream including bi-predictive intra-inter encoded blocks."

Against the aforementioned limitations of Claim 13, the Examiner cited Alvarez, reasoning as follows: "As per claim 13, Alvarez inherently teaches a video decoder adapted to decode a bitstream including bi-predictive intra-inter encoded blocks (see fig. 1 element 133 and col.1, lines 34-35)."

However, the Examiner has simply pointed to prior art FIG. 1, as noted above. The decode subsystem 133 is, thus, part of the admitted prior art, but has nothing to do with the invention of Alvarez, which as noted above is explicitly directed to a video encoder (see, e.g., col. 1, lines 7-8, and col. 2, lines 51-54). Nonetheless, simply pointing to a decoder does not take into account the remaining limitations recited in Claim 13, namely "adapted to decode a bitstream including bi-predictive intra-inter encoded blocks". As argued above, Alvarez does not disclose intra or inter predictions, let alone predictive intra-inter encoded blocks as recited in Claim 13.

For example, Alvarez includes no occurrence of the word "predict" and only one occurrence of the word "prediction" as follows:

A variety of such coding metrics are formed (e.g. entropy, noise, frequency content, etc.) on a frame basis so that the encode-subsystem will "know enough about each frame," at least statistically, to allocate bitrate, adjust noise, form predictions and otherwise code each frame. In accordance with the invention, coding metrics can also be utilized during pre-processing (in addition to and/or as substituted for experimentally derived metrics). More specifically, the use of derived and/or coding metrics and limiting is found to facilitate more accurate

motion determination in the context of performing adaptive conversion as taught herein.

Hence, to the extent that Alvarez even mentions predictions, the same pertains to common uses of coding metrics, including forming predictions. However, Alvarez does not further disclose any use of predictions, let alone regarding his invention, let alone in the same manner as recited in Claim 13. This is not surprising, as Alvarez does not require predictions in his pre-processing approach (pre-processing with respect to ENCODING) to down-conversion video de-interlacing. Moreover, in view of the preceding, namely that Alvarez is directed to a pre-processor for performing pre-processing prior to encoding, we further note that Claim 13 is directed to a decoder adapted to decode a bitstream and, hence, Alvarez explicitly teaches away from the recited limitations in Claim 13. Again, we note that while a teaching away argument is not germane to a rejection under 35 U.S.C. 102, it nonetheless shows that Alvarez actually does not at all anticipate the subject matter of Claim 13, as every limitation must be shown in a prior art reference in a rejection under 35 U.S.C. 102.

Thus, Alvarez does not teach or suggest all of the above reproduced limitations of Claim 13. Accordingly, Claim 13 is patentably distinct and non-obvious over Alvarez for at least the preceding reasons.

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” MPEP §2131, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Since each and every element of the claimed invention is not included in the prior art reference, a proper prima facie rejection has not been constructed by the Examiner. Hence, Claims 1, 9, 13, 14, 15, and 19 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above.

“If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious” (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Claims 2-8, 10-12, 16-18, and 20-22 directly or indirectly depend from Claims 1, 9, 15, and 19, respectively, and thus include all the limitations of Claims 1, 9, 15, and 19, respectively. Accordingly, Claims 2-8, 10-12, 16-18, and 20-22 are patentably distinct and non-obvious over the cited references for at least the reasons set forth above with respect to Claims 1, 9, 15, and 19, respectively.

Reconsideration of the rejections is respectfully requested.

In view of the foregoing, Applicants respectfully request that the rejections of the claims set forth in the Office Action of September 10, 2010 be withdrawn, that the pending claims be allowed, and that the case proceed to early issuance of Letters Patent in due course.

It is believed that no further additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicants' Deposit Account No. 07-0832.

Respectfully submitted,

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Interview Summary

Application No.

10/569,319

Applicant(s)

TOURAPIS ET AL.

Examiner

Emmanuel Bayard

Art Unit

2611

All participants (applicant, applicant's representative, PTO personnel):

(1) Emmanuel Bayard.

(3) _____.

(2) Gapare Randazzo.

(4) _____.

Date of Interview: 20 October 2010.

Type: a) ☒ Telephonic b) ☐ Video Conference

c) ☐ Personal (copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.

If Yes, brief description: _____.

Claim(s) discussed: 1, 14 and 19.

Identification of prior art discussed: _____.

Agreement with respect to the claims f) ☒ was reached. g) ☐ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Based on the applicant's arguments regarding the 101 rejection, where he refers to MPEP section 2111.02(I) which states that "any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation", as well as the portions of the specifications in support of the rejected claims satisfying the requirements of 35 U.S.C. 101, Examiner has agreed to withdraw the 101 rejection.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Emmanuel Bayard/
Primary Examiner, Art Unit 2611

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.